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The Whole Theory of This Universe—A Step Forward to Einstein. Part-4: "Concept Map of Rotating Universe"

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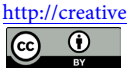


Abstract

The article collectively proposes a revolutionary perspective on the universe, intertwining concepts of time, spatial positioning, and cosmic dynamics. We introduce the idea of a rotating universe centered around Mega Central Energy Pools (MCEPs), where time varies relative to the distance from the universe's center, potentially enabling time travel. This model challenges conventional notions of time and cosmology, suggesting that black holes and white holes act as cosmic recycling factories. Additionally, this model unveils a novel theory of dark matter, positing photons as its constituents and highlighting their role in energy transfer across the cosmos. Furthermore, the investigation into Venus's unique day-length-to-year-length ratio unveils a microscopic mechanism involving swirling energy droplets, charged particles, and field interactions, offering insights into planetary dynamics on both micro and macro scales.

Keywords

Rotating Universe, Time Stair, Time Acceleration, Time Dilations, Accelerating Galaxies

1. Introduction

This article presents a novel concept of the universe as a rotating structure centered around a central energy pool, with an outer edge referred to as the sky. It explores the relationship between distance, time acceleration, time dilation, and the stretching of light wavelengths as objects move away from Earth in space. The article addresses questions related to the passage of time, the acceleration of galaxies, and the increasing spin of Mars. It proposes that as Earth and other celestial objects move away from the center of the universe, time passes faster, re-

sulting in a future with shorter time intervals. The concept of Mega Central Energy Pools (MCEPs) is introduced, responsible for the rotation of the universe and the generation of new galaxies. The article concludes by suggesting that time is not a constant and is influenced by the relative distances between objects, and by inviting the possibility of time travel using advanced spacecraft. This theoretical model of whole universe delves into the innovative conception of the universe, wherein time emerges as a relative and dynamic quantity. The intricate relationship between time and spatial positioning challenges conventional methods of determining the universe's age from an Earth-centric perspective. Through a comparative analysis of time intervals observed at different locations within the universe, the relativity of time becomes evident, leading to the realization that time progresses at varying rates across cosmic distances. This dynamic interplay between time, spatial relationships, and celestial motion unveils a narrative of evolution and change. Despite the complexity inherent in accurately calculating the universe's age, insights gained from the behavior of galaxies, the recycling of celestial bodies, and the directional attributes of telescopic observations offer avenues for further exploration. This model underscores the potential significance of a central cosmic vantage point, where time dilation could provide a more refined estimation of the universe's age, bridging theoretical concepts with observable phenomena. As humanity's quest for cosmic understanding continues, the enigma of time's relativity remains a compelling force driving the exploration of the universe's mysteries. It also suggests that black holes and white holes are actually energy pools that act as recycling factories in the cosmic web, converting energy-poor or dead matter into energy-rich stars, galaxies, and photons.

Cosmology has made significant strides in understanding the universe's evolution over the span of 13.8 billion years, employing two crucial principles: the clustering of matter in galaxies and Einstein's theory of general relativity. This theory has been pivotal in determining the universe's expansion at various points in time [1]. This progress holds the potential to lead us towards a novel theory capable of elucidating existing mysteries [2]. The overall energy density of the Cosmic Microwave Background (CMB) is currently estimated to be approximately 10% of unity. Evaluations of mass, light, X-ray emissions, and the movements of galaxy clusters converging around 0.2 to 0.3 suggest a significant contribution from an energy vacuum. This vacuum seems sufficient to account for the universe's accelerated expansion. The intriguing dimming of high-redshift type Ia Supernovae (SNe Ia), as observed by independent research teams, has been interpreted as compelling evidence for the universe's accelerating expansion [3]. Ongoing efforts aim to correlate radial velocities and distances relative to the sun's movement with the spectrum restoration to an extragalactic nebula. However, these endeavors have yet to yield conclusive evidence [4]. Our world appears to be experiencing acceleration, either due to a positive constant cosmology or another form of dark energy with strong negative pressure [5]. The argument for dark energy largely relies on the universe's expansion acceleration,

even though direct measurements remain elusive. The verification of existing data hinges on the disparity between observed and calculated redshift magnitudes, yet its interpretation remains uncertain [6]. A promising new numerical method has been proposed for constructing models of binary systems involving neutron black holes [7]. By the mid-20th century, most physicists had concluded that the cosmological constant was zero, following Einstein's abandonment of it in favor of the expanding cosmos detailed by the Friedmann-Lemaitre model [8]. Nevertheless, the concept of a positive cosmological constant was rekindled as a straightforward explanation for dark energy, after Saul Perlmutter, Brian P. Schmidt, and Adam G. Riess published their hypothesis of an accelerating cosmos in 1998. A viable model of an infinitely static universe must address three key factors: the intergalactic redshift, cosmic microwave background radiation, and the mechanism for regenerating matter, particularly hydrogen atoms. This is essential to prevent the universe from gradually "running down" due to stellar processes converting matter into energy [9]. Without such mechanisms, the universe could be populated primarily by non-living entities like black holes and black dwarfs [10].

Now, let's explore some intriguing questions:

1) Why did time pass slowly in the past?

2) Why are galaxies accelerating?

3) Why is Mars spinning faster?

4) Why is the moon moving away from us?

5) Why is there a mysterious arrangement of nebulae at the centre of the Milky Way?

6) How does the recent discovery of oxygen-28 challenge existing theories?

7) Why is the age of the universe neither 13.6 billion light years nor 27 billion light years?

8) Why is the Hubble constant not a constant at all?

9) What are the basics of quantum entanglement?

About three centuries ago, the renowned English astronomer Edmond Halley initially posited that the Moon was gradually moving away from Earth. This hypothesis was rooted in his examination of historical eclipse records. It wasn't until the 1970s, however, that his suspicions were validated. Laser beams, directed at mirrors placed on the Moon by both US and Soviet missions, revealed that the Moon is indeed receding from Earth at a pace of approximately 3.8 centimeters annually [11] [12].

A notable observation relates to Mars, as indicated by recent NASA data from the Insight mission. Mars's rotation is accelerating, resulting in slightly shorter days over time. Research published in the journal Nature on June 14, using data from NASA's Insight mission, demonstrated this acceleration at a rate of 4 milliarcseconds per year [13].

A mysterious arrangement of clouds within the galactic bulge at the Milky Way's center has intrigued scientists since its discovery a decade ago. The ar-

rangement of these clouds remains unresolved, with a Manchester Ph.D. student, Bryan Rees, making the initial discovery (see **Figure 1**) [14] [15].

The research findings have been documented in the journal Monthly Notices of the Royal Astronomical Society. According to Rajendra Gupta, an adjunct professor of physics in the Faculty of Science at the University of Ottawa and the author of the study, their innovative model extends the timeline for galaxy formation by several billion years. This adjustment redefines the age of the universe, now calculated to be 26.7 billion years instead of the previously estimated 13.7 billion years [16].

The recent discovery of oxygen-28, an isotope of oxygen with 20 neutrons and eight protons, marks a significant breakthrough in nuclear physics. Physicists have pursued the existence of this peculiar isotope for years, primarily due to its anticipated unique characteristics, which could serve as a critical testing ground for theories regarding atomic nuclei. By challenging established theories, the observation of oxygen-28 opens the door to exciting new avenues of research and invites physicists to delve deeper into the mysteries of atomic nuclei [17].

New research published in The Astrophysical Journal, conducted by an international team of scientists from institutions such as Sapienza University, the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), and the universities of Pisa, Salerno, and Michigan, and coordinated by the National Astronomical Observatory in Japan, has revealed that the Hubble constant, a vital cosmological parameter measuring the rate of the universe's expansion, is not as constant as previously thought [18].

According to our novel theoretical model of universe, the universe is characterized by a rotating structure centered around a swirling central energy pool, with an outer edge referred to as the sky (see **Figure 2**). It's important to note that Earth does not occupy the center of this universe. To illustrate this, consider drawing 60 equidistant lines radiating from the center of Earth. Each separation between these lines represents a time interval of one second, allowing us to visualize a time stair of seconds (see **Figure 3**). Similarly, we can construct time

Figure 1. A mysterious arrangement of nebulae at the centre of Milky Way.

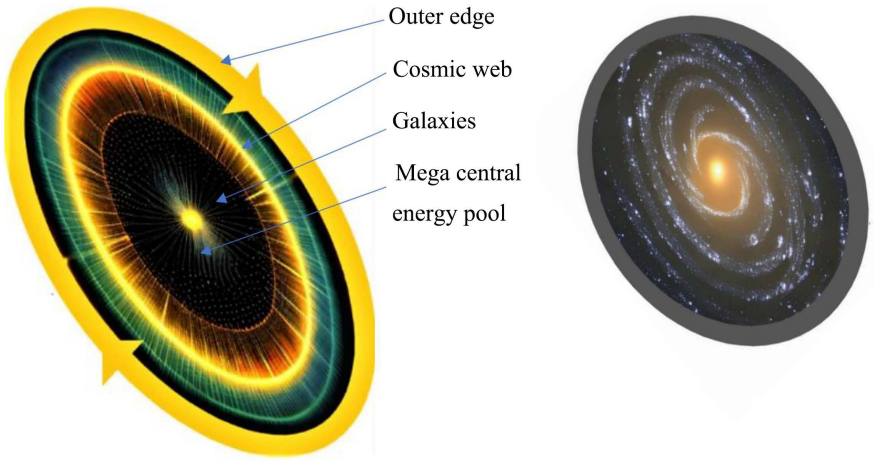


Figure 2. Modified AI generated images of rotating universe.

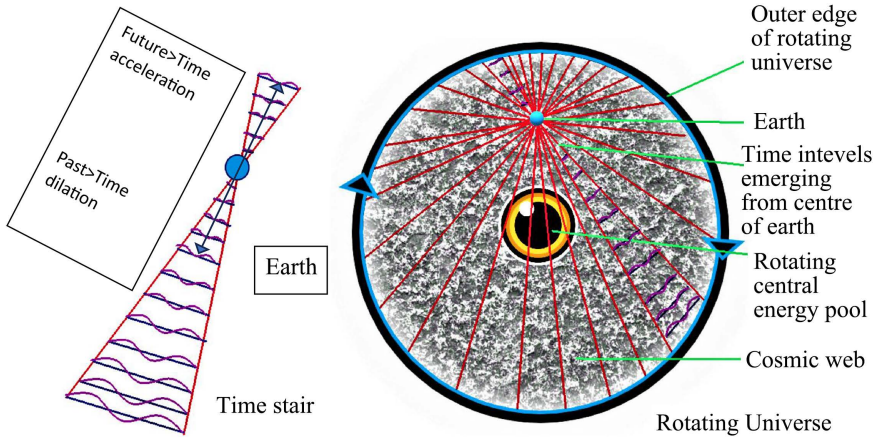


Figure 3. Concept map of time stair of Earth.

stairs for minutes, hours, days, and years, revealing the relationship between distance, time dilation, and the stretching of light wavelengths as we move away from Earth in space.

According to our concept, in the past, time passed slowly on Earth because our planet was closer to the center of the universe. As time progressed, Earth moved away from the center, leading to faster time passage. Near the universe's center, time intervals were longer compared to those as Earth moved away (see Figure 4). The Earth, our solar system, and even our Milky Way are all moving away from this center, causing time to move faster and continue to speed up in the future. Consequently, the duration of seconds, minutes, hours, days, weeks, and years will gradually decrease. This leads to the conclusion that as galaxies move away from the central energy pool of the universe, they experience acceleration. This phenomenon also affects planets like Earth, moon and other celestial objects, causing them to rotate and revolve around their respective axes and orbits at an increased pace.

We can deduce that time is not an independent constant; rather, it depends on the relative distances between objects. Greater distances result in more significant

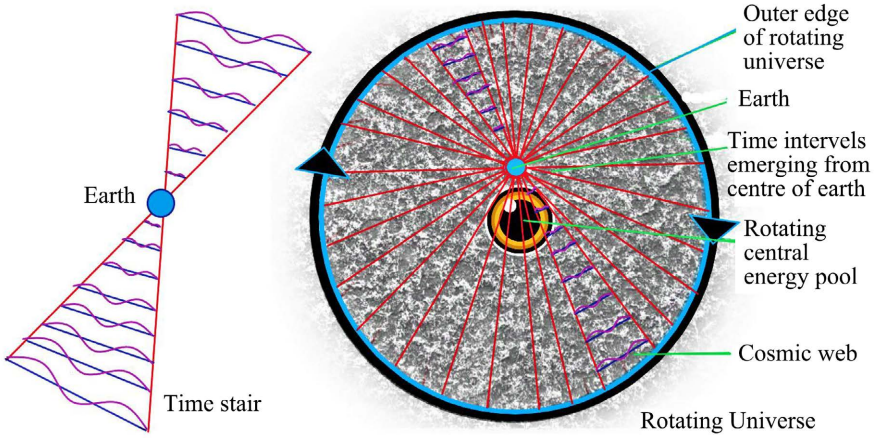


Figure 4. Concept map of time stair of earth.

time dilation, causing variations in time intervals between two objects, such as planets, stars, or galaxies. It's worth noting that the possibility to travel to the near past or future of the universe is open to us, provided we possess a spacecraft capable of surpassing the speed of our Milky Way. By setting the spacecraft's direction to the past or future, we can embark on captivating journeys.

One central feature in this rotating universe is the Mega Central Energy Pool (MCEP), situated at the core, responsible for the universe's rotation. New galaxies emerge from this MCEP and spiral outward, while older galaxies, having expended their energy, are drawn back toward the MCEP for recycling (see Figure 5). The newly created galaxies not only distance themselves from the Mega Central Energy Pool (MCEP) as well as from each other but also gradually expand in size as stars, planets, and moons move farther apart from one another. Similarly, galaxies contain their own central energy pools, generating new stars and housing remnants of dead stars (nebulae) for recycling (see Figure 1).

Constructing a time stair for the universe reveals distinct time zones, each equidistant from the MCEP to the outer universe edge (see Figure 6). This illustrates that time is variable, dependent on relative object distances. Consequently, quantities derived from time and distance, such as wavelength, wave number, light frequency, gravity of photons, and speed, also exhibit variability.

"The Relativity of Time and its Implications for Universe's Age"

Age of the universe is neither 13.8 billion years nor 27 billion light years. In our novel understanding of the universe, time emerges as a relative quantity. This relative nature poses challenges to accurately determining the age of the universe from an Earth-based perspective. This is due to the fact that Earth and our galaxy do not occupy a central position in the universe. The progression of time within the universe varies in comparison to our galaxy and Earth. A clear illustration of this concept is found in the comparison of time intervals observed between the universe's center and its outer edge. At the core of the universe, the duration of a second is shorter than at its outer periphery. As a result, time moves swiftly at the center, while it elapses more slowly towards the universe's outer boundary.

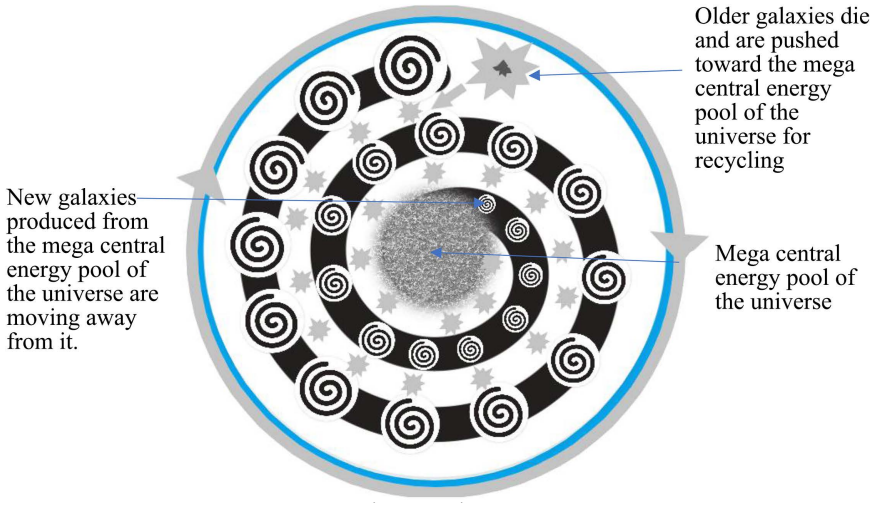


Figure 5. Accelerating galaxies.

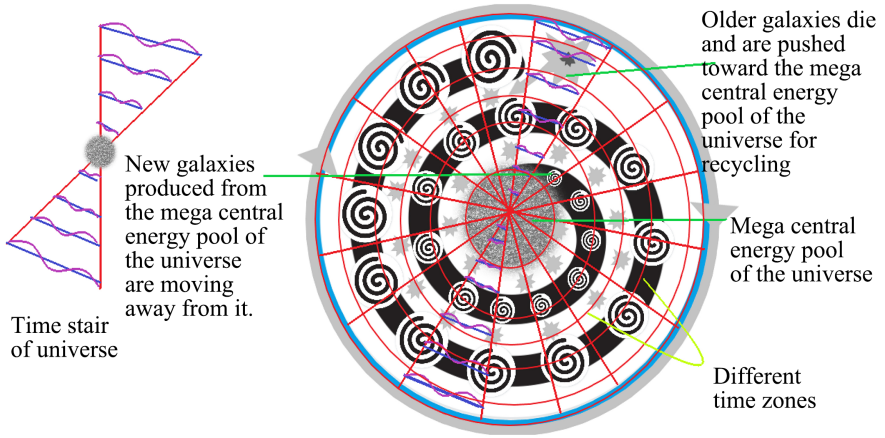


Figure 6. Time Stair and Time Zones of the universe.

This phenomenon is reversed for entities such as our Earth, the Milky Way, and other galaxies. When a galaxy forms from the immense energy reservoir at the core of the universe and initially resides closer to this central point, the time interval for each second is more extensive than when the galaxy gradually migrates away from this central point toward the universe's periphery. This temporal shift is reflected in the historical behavior of Earth, the Milky Way, and celestial bodies in their vicinity. These entities, including planets, moons, stars, and galaxies near the central energy pool, exhibited slow orbital, rotational, and Precessional motions. As they progressively distanced themselves from the central pool, time accelerated, and their movements became increasingly rapid.

Looking ahead, galaxies will experience an accelerated passage of time as they move closer to the universe's outer boundary. This acceleration will propel them faster than ever before (see **Figure 3**). On the contrary, towards the outer edge of the universe or in its vicinity, time progresses more slowly when compared to the rate of time passing at the center of the universe (see **Figure 4** and **Figure 6**). Given time's variable and relative nature, determining the precise age of the un-

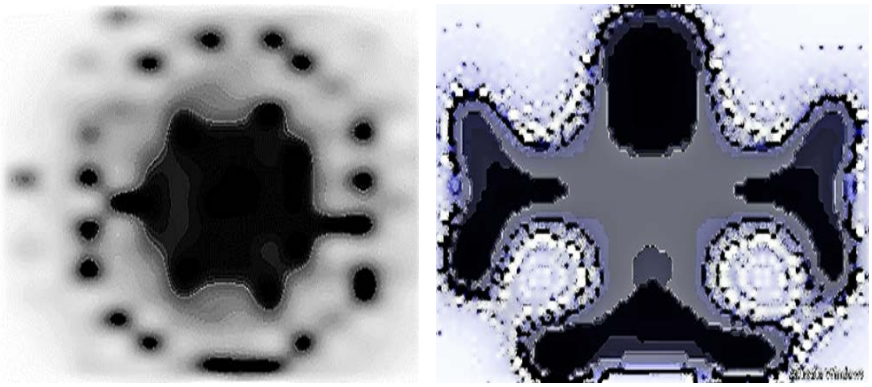
iverse from Earth remains a formidable challenge, particularly when relying on the analysis of radiations emanating from the most remote galaxies.

Several factors contribute to this complexity. Firstly, older galaxies, upon ceasing their lifecycle, become ensnared by the central energy pool, where they undergo recycling. Secondly, the direction of telescopic observations—whether they are focused on the future or past—and the specific data they collect also influence our perspective. Nonetheless, a rough estimation of the universe's age becomes feasible if the observer were situated at the center of the universe's central energy pool and possessed knowledge of the annual rate of time acceleration as well as time dilation. "As, the annual rate of acceleration is also a variable quantity due to variable nature of time with respect to distance of separation, that is way 'Hubble constant is never constant' and never try to fix this value for entire universe."

The "Whole Theory of This Universe–A Step Forward to Einstein" justifies the mysterious arrangements of nebulae within galactic centers and also proposes the atomic model that justifies the existence of O-28. According to this theory, subatomic particles possess their own sub-particles, akin to galaxies, and energy is stored as energy pools within atoms and subatomic particles. These energy pools generate particles, converting energy into matter, while other sub-atomic particles may be trapped by energy pools, leading to the conversion of particles into energy [19]. Additionally, the theory proposes that nebulae, remnants of dead stars, are captured by the Milky Way's central energy pool for recycling, suggesting a fundamental similarity between atomic models and galactic structures. Energy pools, akin to black holes (**Figure 7**).

2. The Complete Picture of the Dark Matter'

In this section, we are Introducing a novel theory of dark matter. We propose that photons uniformly populate the universe, constituting dark matter and acting as efficient carriers of energy. Our research unveils the enantiomeric nature



(a) (b)

Figure 7. (a) Energy from central energy pool is converting into particles; (b) Sub-atomic particles galaxies are trapped by central energy pool *i.e.*, particles are converting into energy.

of photons and their role in forming standing waves and propagating waves. Calculations based on the speed of light offer insights into the mass, force, gravity, and pressure exerted by photons. Furthermore, we present a formula for threshold energy and reveal distinctions between dark and light photons. The investigation sheds light on the rapid and efficient transfer of threshold energy between photons, providing insights into the mechanics of energy wave propagation. Additionally, the study discusses the relevance of these findings to solar energy, explaining how such rapid energy transfer mechanisms contribute to the swift coverage of distance from the sun to Earth. The study concludes by emphasizing the significance of photons in shaping our understanding of quantum mechanics and their pivotal role in the cosmos.

Our present knowledge of photons is, Photons are electromagnetic waves that exhibit wave-like properties, including oscillation in electric and magnetic fields in all directions (X, Y, Z) and interference and diffraction behaviors. Photons are both waves and particles, and this dual nature is a fundamental aspect of quantum mechanics. This phenomenon is known as wave-particle duality. Here's a brief explanation:

Wave-Like Behavior:

- In certain experiments, photons exhibit wave-like behavior. This includes phenomena like interference and diffraction, which are characteristic of waves.
- In interference, photons can overlap and create patterns of constructive and destructive interference, similar to the way waves in a pond can create ripples.
- In diffraction, photons can bend around obstacles or through slits, producing patterns that can only be explained by considering them as waves.

Particle-Like Behavior:

- In other experiments, photons behave like particles. For instance, the photoelectric effect demonstrates that light consists of discrete packets of energy, called photons, which can eject electrons from a material.
- Photons have a quantized energy level, and their interactions with matter often resemble particle interactions.

The behavior of photons depends on the specific experimental conditions and the questions being asked. In some contexts, you may describe photons as waves to explain their behavior, while in others, you might treat them as particles. This duality is not limited to photons; it is a fundamental feature of quantum physics and applies to other subatomic particles like electrons as well. Wave-particle duality challenges classical notions of particles and waves and is one of the key principles of quantum mechanics.

NOVEL THEORY OF DARK MATTER:

"*According to our novel theory of dark matter, photons are material particles uniformly distributed throughout the universe. They constitute the dark matter of the universe and act as carriers of energy from source to observer with zero loss*".

Let us consider a single photon wave moving in the X, Y, Z directions in a cubic space. The possible eight directions of oscillation are diagrammatically shown below (Figure 8).

The direction of propagation is determined by the available energy source [E.S] (see Figure 9).

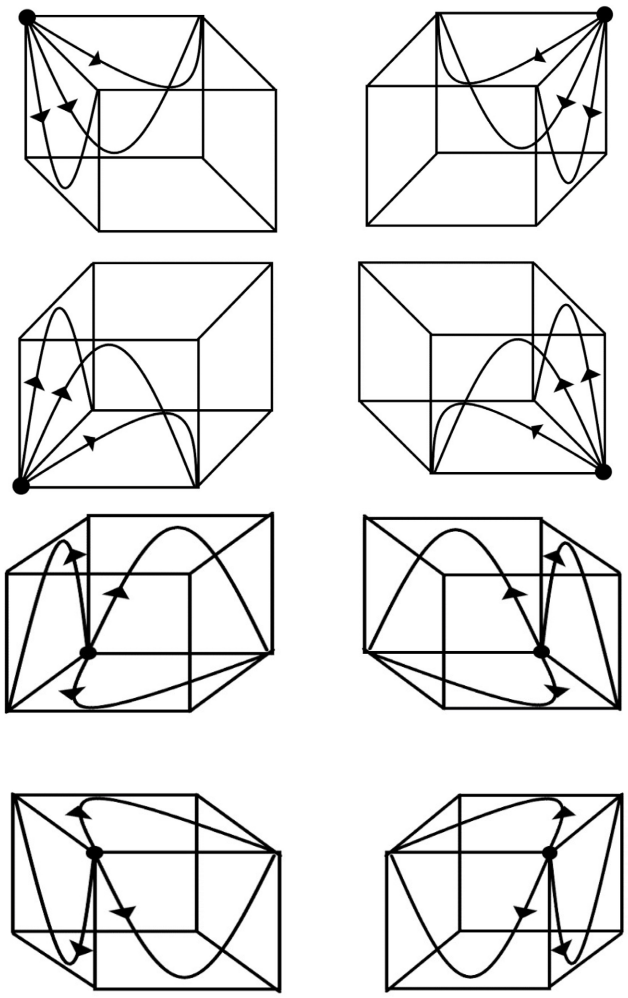


Figure 8. The possible eight direction of oscillation of a photon are diagrammatically shown.

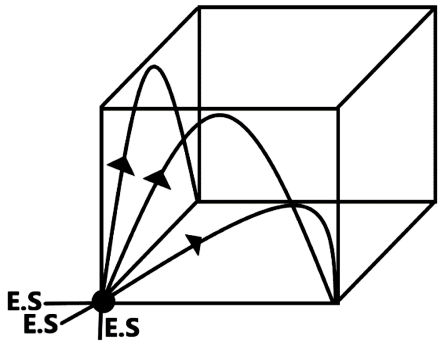


Figure 9. Source of energy and direction of propagation.

According to our novel theory of dark matter, photons possess varying masses, which is why they give rise to waves of different wavelengths. Let us consider photons of different masses moving in the same plane. Heavier photons will form waves with smaller wavelengths, and vice versa, as illustrated in Figure 10.

Now, let's attempt to visualize the complete picture. Consider only two enantiomeric photons, P and P'. In Wave-1, photon-P moves in a clockwise direction to form the crust, while photon-P' moves in an anticlockwise direction to create the trough of Wave-1. In Wave-2, photon-P' continues to move in an anticlockwise direction to form the crust of Wave-2, while photon-P continues to move clockwise to shape the trough of Wave-2. Combining Wave-1 and Wave-2 results in circular or elliptical orbits, where photon-P precesses and spins in a clockwise direction, while photon-P' precesses and spins in an anticlockwise direction, see Figure 11.

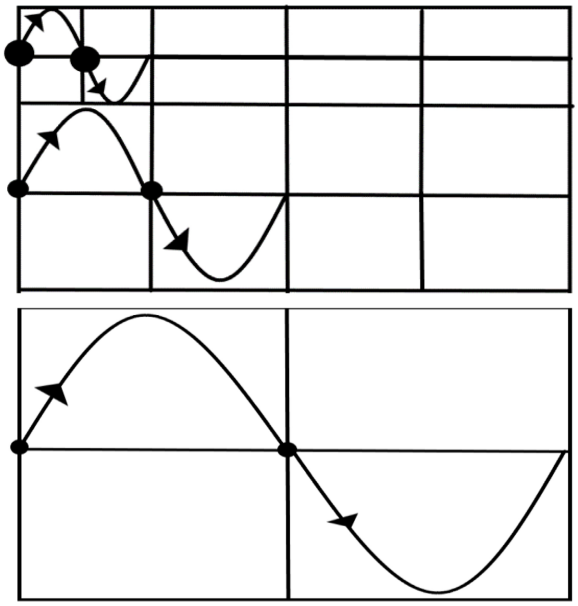


Figure 10. Photons of different masses form waves of different wavelengths.

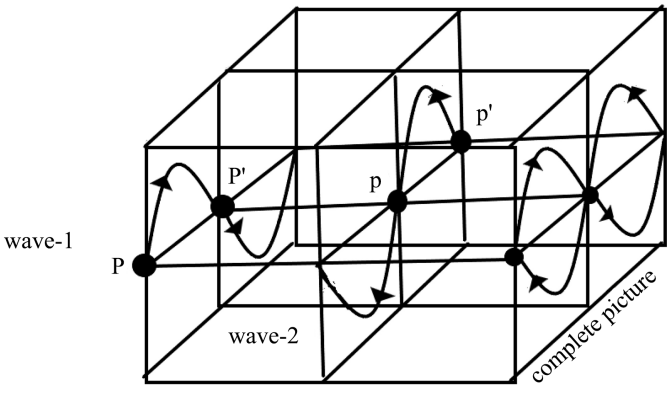


Figure 11. Complete picture of wave formed by enantiomeric pair of photons.

According to our research, at the quantum level, all matter exists in the form of pairs of particles, which are enantiomers of each other. They possess all the same properties except for the direction of precession—one precesses in a clockwise direction, while the other precesses in an anticlockwise direction. For example, there is an enantiomeric pair of electrons: one precesses in a clockwise direction, while the other precesses in an anticlockwise direction. Similarly, positrons (the antimatter counterpart of electrons) exist in enantiomeric pairs, with one precessing in a clockwise direction and the other in an anticlockwise direction. Photons and all other material particles also exist in enantiomeric paired form. If the direction of precession is clockwise, then the direction of rotation and the motion in an orbit will also be clockwise. Conversely, if the direction of precession is counterclockwise, then the direction of rotation and the motion in an orbit will also be counterclockwise (see Figure 12).

Spin up = Ψ = +1/2 spin down = Ψ = −1/2

Spin down = Ψ = −1.2 Spin up = Ψ = +1/2

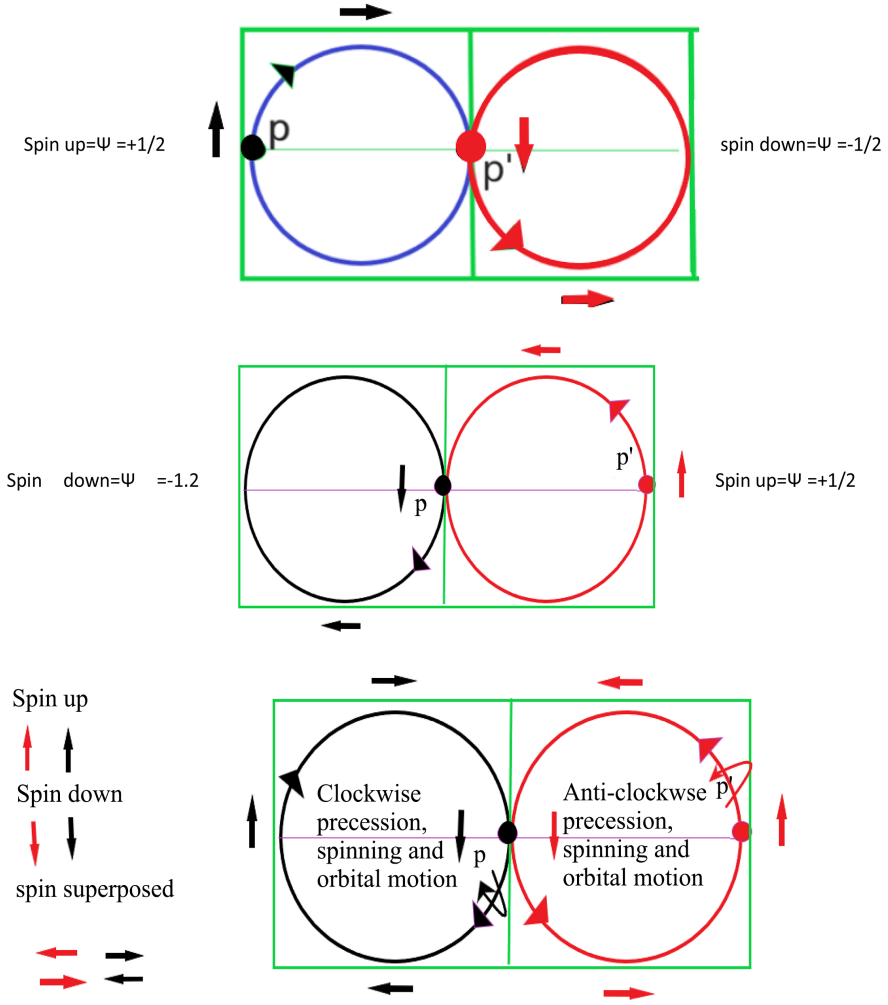


Figure 12. Clockwise and counterclockwise precession, rotation and orbital motion of a pair of enantiomeric photons.

Our research suggests that, photons are uniformly distributed throughout the universe. They are neutral material particles that constitute the dark matter of the universe and possess different masses, sizes, and amounts of energy. Photons exert force and pressure and serve as carriers of energy from source to observer or target. They transfer energy with zero loss, converting all energy into work. As we know, electromagnetic radiations consist of photons, with only a narrow range of this spectrum forming the visible region, while all others are invisible. According to our research, photons are neutral material particles that move in three-dimensional circular or elliptical orbits, either clockwise or anticlockwise due to their enantiomeric nature. They construct propagating waves when transferring energy from source to observer or target like during day in the presence of sun and construct standing wave in the absence of energy source like during night in the absence of sun. Let us construct propagating waves and standing waves by considering two enantiomeric pairs of photons (see Figures 13-15).

Photons do not deviate from their orbits while transferring energy. The direction of energy wave propagation depends on the source of threshold energy—whether it impacts the photon from the x, y, or z direction. If threshold energy is available from all three dimensions, the energy wave will propagate in

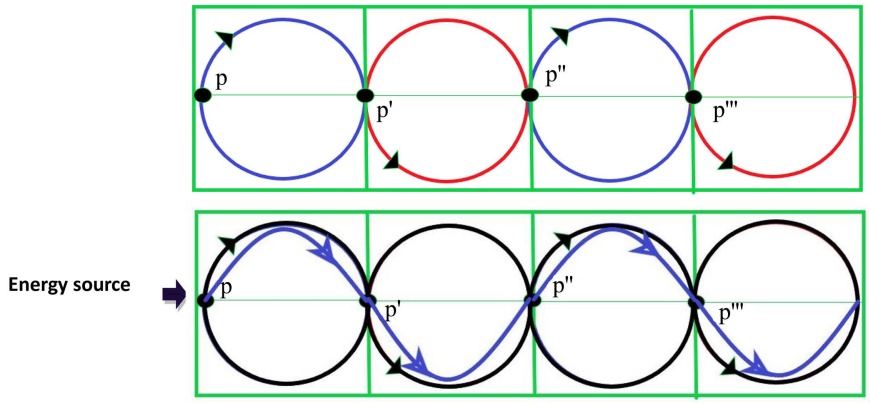


Figure 13. Propagating wave of light photons from left to right.

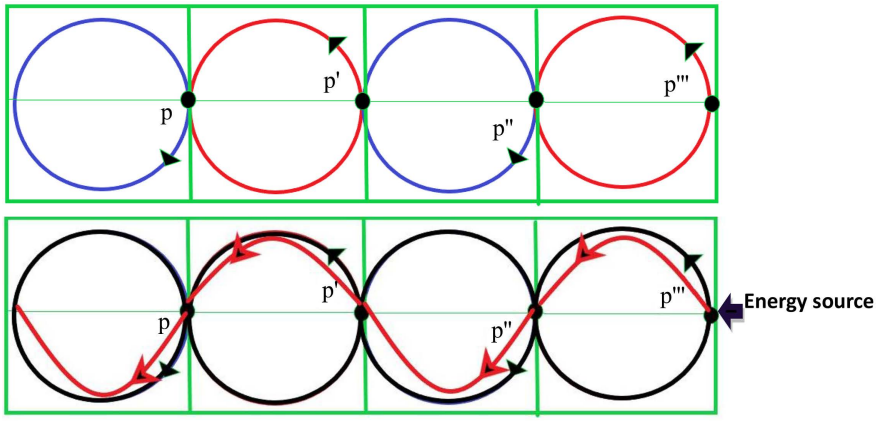


Figure 14. Propagating wave of light photons from right to left.

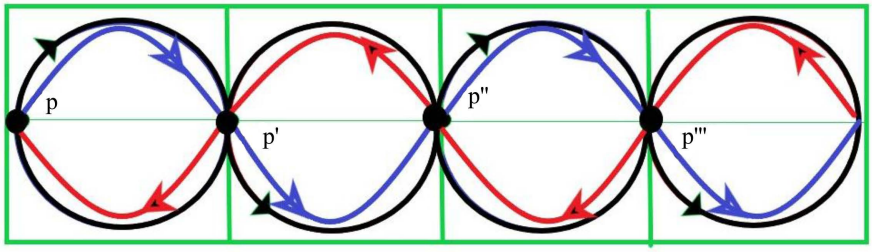


Figure 15. Standing wave of dark photons.

all directions. However, if controlled threshold energy is available from only one direction, the energy wave will travel in that single direction like monochromatic plane polarized light. The threshold energy of photons depends on their masses; heavier photons require more threshold energy than lighter ones. Consequently, heavier photons carry more energy compared to lighter ones. The radius of the orbit of a heavier photon is smaller than that of lighter ones, resulting in waves of smaller wavelengths and greater energy transfer from source to observer. In short, heavier photons require more energy to collide with their enantiomeric photon in a much smaller fraction of a second to transfer their threshold energy compared to lighter photons. After transferring its threshold energy to its enantiomeric photon, the first photon resumes its normal motion. The energy of a dark photon is about 10 times less than that of light photons or photons that carry energy waves. *Threshold energy is the minimum amount of energy required for a photon to approach its enantiomeric photon in a much smaller fraction of a second, colliding with it to transfer all of its threshold energy. In other words, threshold energy is the amount of energy transferred by photons from source to observer or target. Therefore, the energy of a light photon or photons of electromagnetic radiation (such as x-rays, gamma rays, microwaves, etc., which transfer waves of energy from source to target) is actually the threshold energy of photons, which is about 10 times greater than the energy of a dark photon. The energy of a dark photon is equal to the energy of a photon of electromagnetic radiation divided by 10:*

Energy of dark photon = Energy of photon of electromagnetic radiation/10

OR Energy of dark photon = Energy of light photon/10

The darkness or brightness of the universe is due to photons either due to the absence or presence of source of energy like night and day on earth.

PROPERTIES OF PHOTONS

According to our research, photons are neutral material particles and have different masses, sizes, and energies, and they exert force pressure and gravity. We have derived formulas for calculating these parameters of photons. *Our calculations are based upon the assumption, that "when an object moves with the speed of light, its energy becomes equal to its work" In other words, "photons transfer energy from source to observer or target with zero loss of energy i.e. all of the energy transformed into work with zero loss." In other words, "The ener-*

gy transformed into work is actually equal to the threshold energy of a photon".

Let us drive formulas for calculating above mentioned properties of photon.

Our calculations are based upon the assumption that "***when an object moves with the speed of light, its energy becomes equal to its work i.e., E = W***"

When

$$E = W = F \cdot D = mg \cdot \lambda \tag{1}$$

Here $F = mg$ and $D = \lambda$

As the units of $m = \mathrm{kg}$, $g = \frac{\mathrm{m}}{\mathrm{s}^2}$, $\lambda = \mathrm{m}$

So, by putting these units in above equation we have

$$E = \left(\mathrm{kg} \cdot \mathrm{m}^2\right) / \mathrm{s}^2 = \mathrm{kg} \cdot \left(\mathrm{m}/\mathrm{s}\right)^2 = mc^2$$

$$E = mc^2$$

where kg is the unit of mass and m/s is the unit of velocity of light *c*.

As energy transferred by photons from source to observer or target is equal to its work, so, energy transformed into work is actually equal to its threshold energy which is equal to the energy of photons of electromagnetic radiation *i.e.* hυ.

So, $E = mc^2 = W$ = threshold energy (T.E) = $h\upsilon$

Now let us consider the Equation (1) again,

$$E = F \cdot D = F \cdot \lambda \tag{1}$$

$$E = F \cdot \lambda$$

OR

$$F = E/\lambda = h\upsilon/\lambda \tag{RK.3}$$

Mass, force, gravity and pressure exerted by photon

The mass, force, and gravity of a photon can be calculated by using the following formulas:

1) Mass $m = h\upsilon/c^2$

2) Force $F = E/\lambda = h\upsilon/\lambda$ (RK.3)

3) Gravity $g = F/m$

$$g = \frac{\frac{h\upsilon}{\lambda}}{\frac{h\upsilon}{c^2}} = h\upsilon/\lambda \cdot c^2/h\upsilon = c^2/\lambda$$

$$g = c^2/\lambda = c \cdot c/\lambda = c\upsilon$$

$$g = c^2/\lambda \tag{RK-4}$$

also,

$$g = c\upsilon \tag{RK-5}$$

4) Pressure

$$P = F/A = mg/A = m/A \cdot g/1 = \mathrm{kg/m^2 \cdot m/s^2} = \mathrm{kg/m \cdot 1/s^2} = \mathrm{kg/m \cdot (1/s)^2}$$

5) $P = \mathrm{kg/m \cdot s^{-2}} = \mathrm{mass/wavelength \cdot frequency^2} = m/\lambda \cdot \upsilon^2$

where $\upsilon = c/\lambda$

So,

$$P = m/\lambda \cdot (c/\lambda)^2 = mc^2/\lambda^3 = E/\lambda^3$$

So,

$$P = \frac{mc^2}{\lambda^3} \quad \text{(RK-6)}$$

and

$$P = \frac{E}{\lambda^3} = \frac{E}{l^3} = \frac{E}{V} \text{ or } P = \frac{E}{V} \text{ and } PV = E \text{ or } E = PV \quad \text{(RK-7)}$$

where g is gravity, c is the velocity of light, h is the Planck constant, lambda is wavelength, and ν is the frequency of a photon. Gravity of photon can be calculated by using either of the above two equations, RK-4 or RK-5. And pressure exerted by photon is the energy transferred by photon per unit volume and can be calculated by using either of the above two equations, RK-6 or RK-7. If we divide energy by 10, then it gives the energy of dark photon

THRESHOLD ENERGY (T.H.E)

Threshold energy is the minimum amount of energy require for photon to approach its enantiomeric photon in a much smaller fraction of second, collide with it to transfer all of its threshold energy. In other words, the threshold energy is the amount of energy transferred by photons from source to observer or target. So the energy of light photon or photons of electromagnetic radiations (like x-rays, gamma rays, microwaves etc that transfer wave of energy from source to target is actually the threshold energy of photons which is about 10 times greater than the energy of dark photon

Energy of dark photon = Energy of photon of electromagnetic radiation/10 = hν/10

"As energy transferred by photons from source to observer or target is equal to its work, so, energy transformed into work is actually equal to its threshold energy which is equal to the energy of photons of electromagnetic radiation *i.e.* $h\nu$.

So, $E = mc^2 = W$ = threshold energy (T.H.E) = $h\nu$

Dark photon is the photon in its normal motion in three-dimensional space in the absence of external source of energy and form standing wave with its enantiomeric photon. Dark photons are uniformly distributed throughout the universe in enantiomeric pairs and form the dark matter of the universe and act as carrier of energy from source to observer. While light photon or h√-photon or EM-photon (photon of electromagnetic radiations) is that photon which carry wave of energy *i.e.* threshold energy and forms propagative wave. That's why James Webb receives the light energy coming from galaxies at a distance of billions of years and after processing it develops the images.

Threshold energy is about 10 times more than the energy of dark photon. The T.H.E increases the rate of Precessional motion but the tilt angle remains the same, that's why the size of the radius of orbit of photon remains same. For calculating threshold energy, let us consider an enantiomeric photon pair, one precessing clockwise and other precessing anticlockwise in orbits of radius r.

Suppose, in the absence of an energy source, the first photon, P, travels a curved distance clockwise from A to B in one second, and the second photon, P', covers the curved distance anticlockwise from B to C in one second as well. If we double the energy of the first photon, P, through an external energy source, it will travel the same curved path from A to B in 0.5 seconds, but the second photon will only cover half of its path from B to C in 0.5 seconds (see Figure 16).

Increasing the energy of the first photon, P, three times through an external energy source makes it travel the same curved path from A to B in 0.25 seconds. However, the second photon will only cover 25% of its path from B to C in 0.25 seconds.

Similarly, if we increase the energy of the first photon, P, four times through an external energy source, it will travel the same curved path from A to B in 0.125 seconds. Conversely, the second photon will only cover 12.5% of its path from B to C in 0.125 seconds.

If we further increase the energy of the first photon, P, ten times through an external source, it will traverse the same curved path from A to B in a much smaller fraction of a second. However, the second photon will cover only a negligible distance of its path from B to C and remains almost stationary. As the first photon approaches the second photon, they collide, and the first photon transfers all of its threshold energy before resuming its normal position. The process continues as the second photon transfers its energy to the third photon, and so on. This rapid exchange occurs in a much smaller fraction of a second, explaining why solar energy covers the distance from the sun to Earth in just 8 seconds.

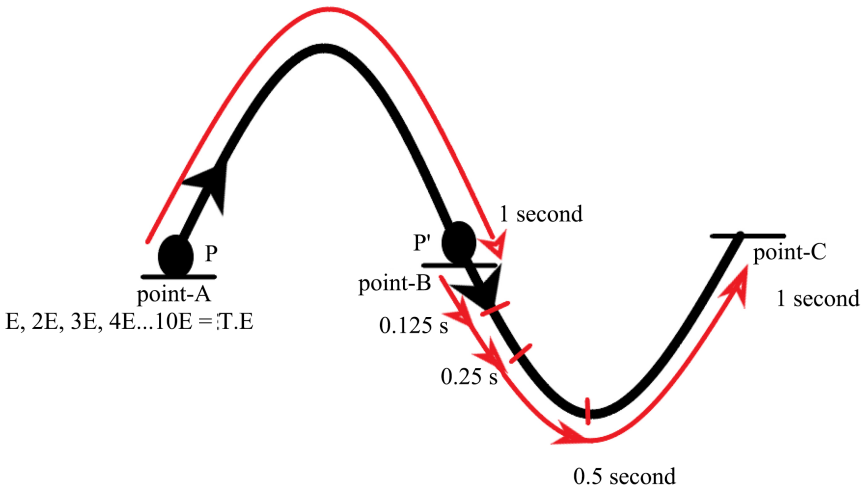


Figure 16. Threshold Energy [T.E] of a photons.

3. Prograde Rotations Verses Retrograde Rotations

The length of a day on Venus, also known as its rotation period, is longer than its year. Venus has an extremely slow rotation on its axis, taking about 243 Earth days to complete one rotation. In contrast, it only takes about 225 Earth days for Venus to complete one orbit around the Sun. Additionally, Venus rotates in the opposite direction to most planets in our solar system, including Earth, which means its rotation is retrograde. As a result of its slow rotation and retrograde motion, a day on Venus (one full rotation on its axis) is longer than a year on Venus (one orbit around the Sun). The length of a day on Venus being longer than its year is a consequence of the planet's peculiar rotation and orbit characteristics.

1) Retrograde Rotation: Venus rotates on its axis in the opposite direction to the majority of planets in the solar system, including Earth. This is known as retrograde rotation. While Earth rotates counterclockwise on its axis when viewed from above the North Pole, Venus rotates clockwise. This retrograde rotation gives Venus an unusually long day.

2) Slow Rotation: Venus has an extremely slow rotation speed. It takes about 243 Earth days for Venus to complete one full rotation on its axis. This slow rotation contributes to the extended length of a day on Venus.

3) Shorter Year: Despite the long day, Venus has a relatively short year compared to its rotation period. Venus orbits the Sun faster than it rotates on its axis. It takes approximately 225 Earth days for Venus to complete one orbit around the Sun. As a result, a year on Venus (time to orbit the Sun) is shorter than a day on Venus (time to complete one rotation).

The combination of retrograde rotation and slow rotation speed results in the unusual situation where a day on Venus is longer than its year. This is a unique characteristic among the planets in our solar system.

But the question is how this happens? According to "The Whole Theory of This Universe—A Step Forward to Einstein", Part-3rd: "The Universal Theory of Visible and Invisible Universe". In a densely concentrated central energy pool, it is likely that the swirling motion of microscopic energy droplets creates two opposite charges. These small energy droplets can swirl either clockwise or anti-clockwise, forming non-superimposable mirror images of microscopic tornadoes, ultimately gaining positive and negative charges. This process leads to the formation of a pair of particles—catitron, carrying a positive charge, and an anitron, carrying a negative charge. Consequently, the electrostatic force of attraction comes into existence.

This mechanism applies to the generation of all other subatomic particles or particle galaxies, where the mass depends on the size of swirling energy droplets, and their charge depends on the direction of swirling. When particles are produced in pairs as non-superimposable mirror images (enantiomers), neutral particle galaxies are formed. It is proposed that neutral particle galaxies consist of pairs of particles possessing nearly identical properties, except for their

charges. This leads to the conclusion that the electrostatic force of attraction between opposite charges is the fundamental force, from which all other forces in the universe, such as those between atoms, ions, molecules, celestial bodies, and galaxies, originate.

The revolutionary motion of charged particles creates an oscillating electric field, while the rotational or spin motion of particles generates an oscillating magnetic field. The interaction of these fields gives rise to gravitational fields, producing micro gravitational fields at atomic and subatomic levels. The collective response of these micro gravitational fields creates a gravitational field responsible for gravity and gravitational force. The generation of charges from a more saturated central energy pool leads to stronger electrostatic forces, resulting in a greater number of anitron and catitron particles and, consequently, stronger gravitational forces and higher gravity.

The concept is extended to explain that the curvature of space-time around a massive object is essentially a curved path due to gravity, causing all objects to move in curved paths. Space is described as three-dimensional, and gravity is symmetrically present around both microscopic and macroscopic bodies. The three dimensions of a moving object change their directions with respect to their surroundings, but the dimensions of the moving object remain constant.

Our novel theory predicts that microscopic and macroscopic bodies move around each other due to the generation of three oscillating fields—oscillating electric, magnetic, and gravitational fields—resulting in various types of motions: revolutionary, spinning or rotational, and Precessional motion.

Electric and gravitational fields oscillate perpendicularly to each other at a fixed 90-degree angle, while the magnetic field oscillates at a variable precession angle ranging from 0 to 90 degrees. These three oscillating fields originate from a coincided center of mass and gravity of a planet or star etc. A change of 1 degree in the precession angle leads to a 2-degree change in the tilt angle (**Figure 17**).

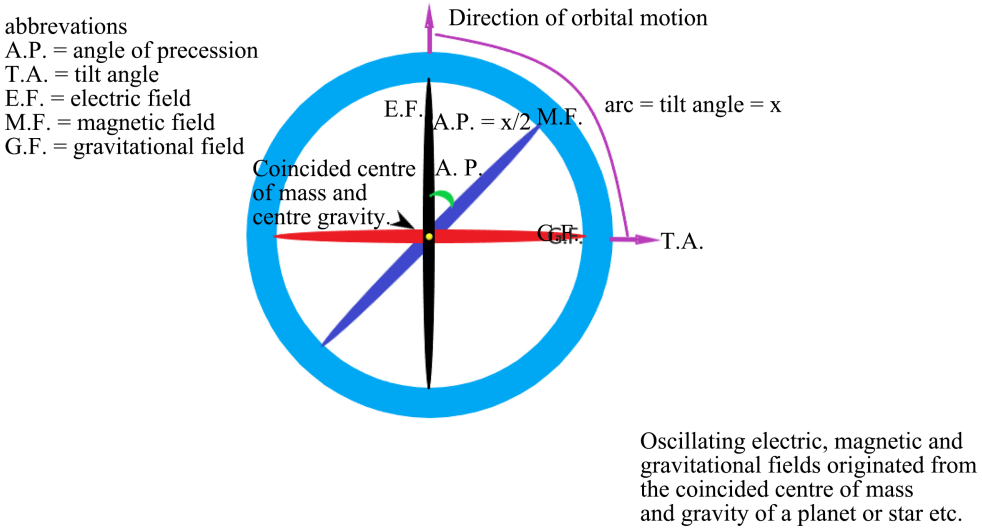


Figure 17. Oscillating fields originate from a coincided center of mass and gravity.

When the precession angle is 0 degrees, the tilt angle is also 0 degrees, resulting in the overlap of the magnetic and electric fields. This configuration maximizes the radius of the orbit and the length of the year, while minimizing the length of the day (Figure 18).

Simultaneously, sunlight illuminates half of the planet, resulting in the shortest day length. This is due to the maximum radius of the orbit, leading to the longest year length. The North Pole is situated where the electric and magnetic fields overlap. The planet's spinning direction aligns with the equator or gravitational field, while the orbital motion aligns with the electric field, as illustrated in (Figure 19).

As the magnetic field oscillates toward the gravitational field, it precesses or oscillates in an anti-clockwise direction, inducing an anti-clockwise planetary spin around its star. The increasing precession angle results in a twofold increase in the tilt angle. Consequently, the radius of the orbit gradually decreases, the length of the year decreases, and the length of the day increases. When the precession angle reaches 90 degrees, and the tilt angle equals 180 degrees, the magnetic field overlaps with the gravitational field (Figure 20). Over the course of

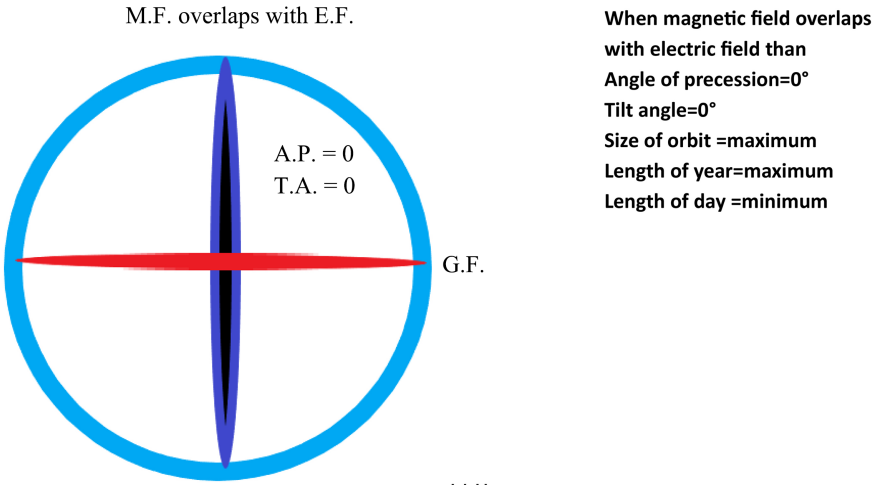


Figure 18. When the magnetic field overlaps with electric field.

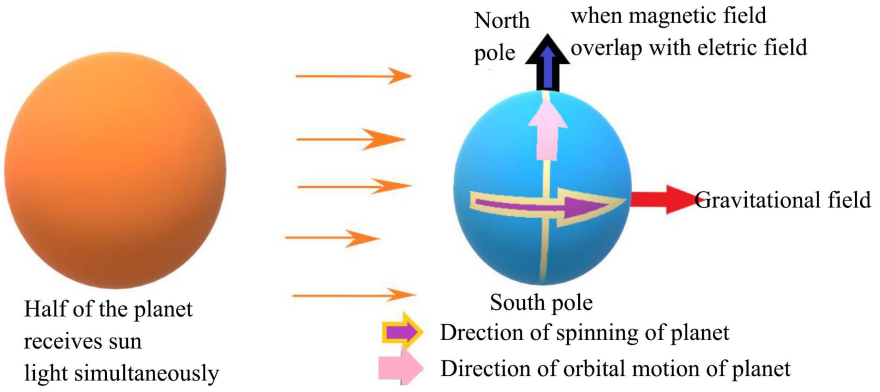


Figure 19. Half of the planet is illuminated by sunlight simultaneously.

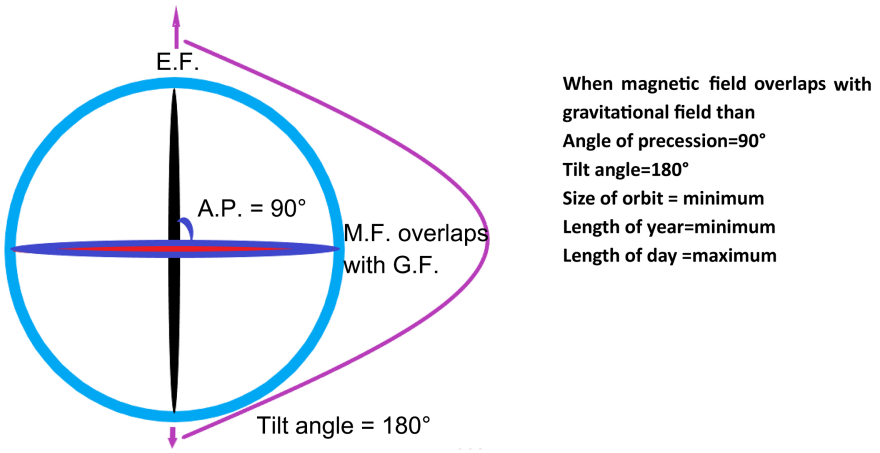


Figure 20. Magnetic field overlaps with gravitational field.

billions of years, the magnetic field undergoes a precession journey, transitioning from 0˚ to 90˚. Throughout this extended period, the planet undergoes prograde rotation. This journey comprises millions of elliptical or spherical cycles, progressively diminishing in size. The minimum size of the elliptical cycle (orbit) occurs when the precession angle between the electric field and the magnetic field reaches 90˚ or when the precession angle between the magnetic field and gravitational field is 0˚ (**Figure 26**, **Figure 27**).

This configuration minimizes the radius of the orbit, the length of the year, and maximizes the length of the day. The overlapping of the magnetic field on the gravitational field results in synchronous motion, akin to the moon's orbit around Earth, where one full moon day equals approximately 29 Earth days, completing one revolution in about the same period. Half of the planet receives sun light while other half remains in complete darkness. Direction of spinning of planet lies on orbital axis. The orbital motion and south pole align with electric field (**Figure 21**).

Following this, the magnetic field returns towards the electric field, precessing or oscillating in a clockwise direction, resulting in clockwise spinning of a planet around its star, while the revolutionary motion of the planet remains anti-clockwise *i.e.* the prograde rotation of planet changes into its retrograde rotation. As the magnetic field undergoes precession, moving from a precession angle of 90 degrees to 0 degrees (tilt angle decreasing from 180 to 0 degrees), the planet exhibits retrograde rotation *i.e.* it allows the sun to rise from west and sets in east on planet like Venus. The precession angle and tilt angle gradually decrease, leading to an increase in the radius of the orbit and the length of the year, along with a gradual decrease in the length of the day (**Figure 22**).

Venus has a tilt angle of 177.4 degrees, which effectively translates to −2.6 degrees (177.4 − 180 = −2.6 degrees). The angle of precession is −1.3 degrees (−2.6/2 = −1.3 degrees), resulting in retrograde rotation. Venus is currently in its synchronous period, explaining why its day length and year length are nearly equal and sun sets in east on Venus (**Figure 23**).

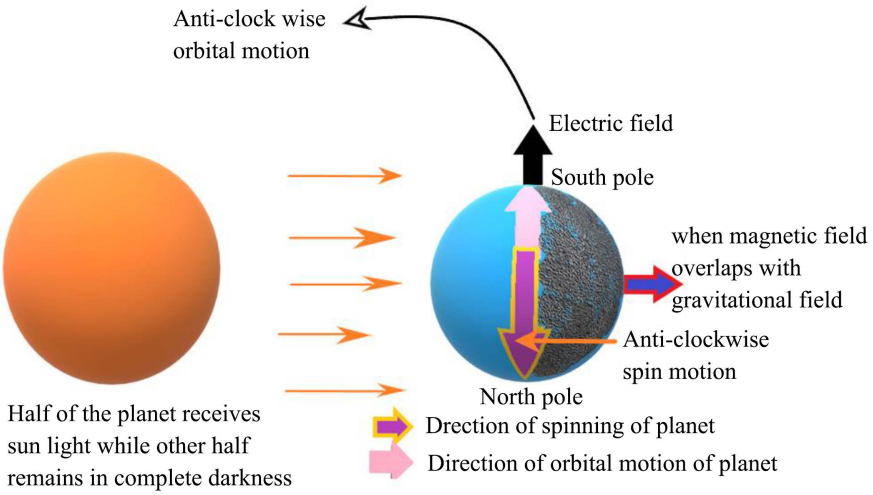


Figure 21. The synchronous motion of a planet with its star.

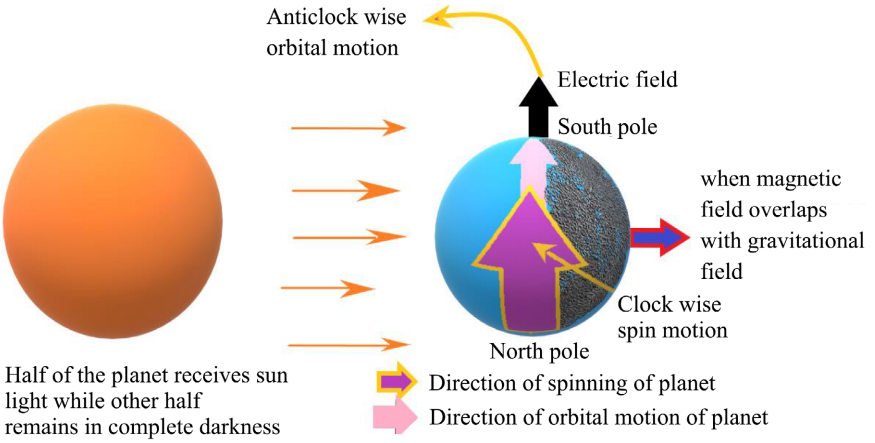


Figure 22. Clockwise spinning of a planet around its star.

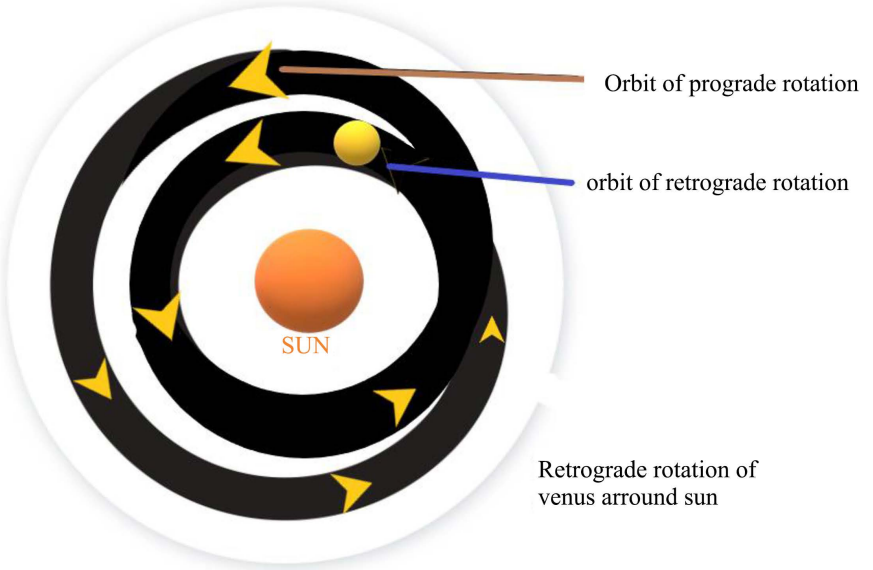


Figure 23. Retrograde rotation of Venus around sun.

The Moon has a very small axial tilt, also known as its obliquity. The Moon's axial tilt is only about 1.54 degrees relative to its orbit around Earth which is actually 180 − 1.54 = 178.46 degrees and its angle of precession is 178.46/2 = 89.23 degrees. So, we expect that after an incremental increase of 0.77 degrees in the moon's magnetic field precession could lead to a retrograde rotation, though this process may take millions of years (**Figure 24**).

The axial tilt of Earth is 23.5 degrees. The angle of precession of magnetic field of earth will be A.P = T.A/2 = 23.5/2 = 12.75˚. Hence, the magnetic field of earth is currently oscillating between electric field and gravitational field at an angle of precession of 12.75 degree with electric field. For Earth, over geological timescales of billions of years, the day has been getting slightly longer but these changes in day lengths are on the order of milliseconds per year and are not readily noticeable on human timescales. This also happens on other planets and exoplanets leading to more significant or smaller changes in day length over millions of years. All these changes are in accordance with our novel theory. (**Figure 25**).

Prograde and retrograde orbits may occur in loops of elliptical orbits as shown below (**Figures 26(a)-(c)**, **Figure 27(a)**, **Figure 27(b)**).

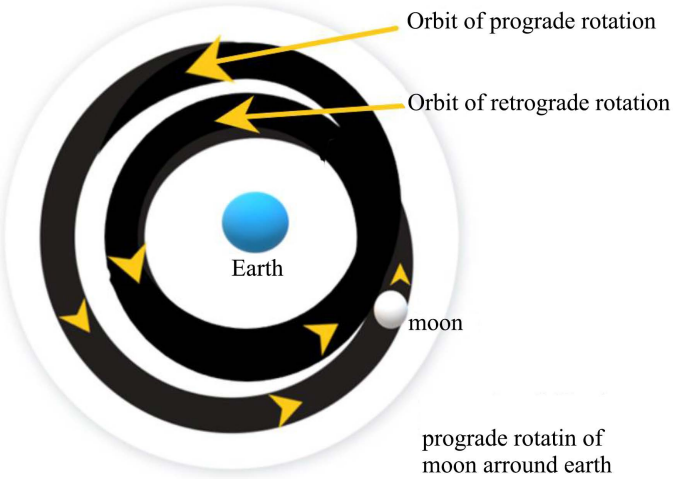


Figure 24. Prograde rotation of moon around earth.

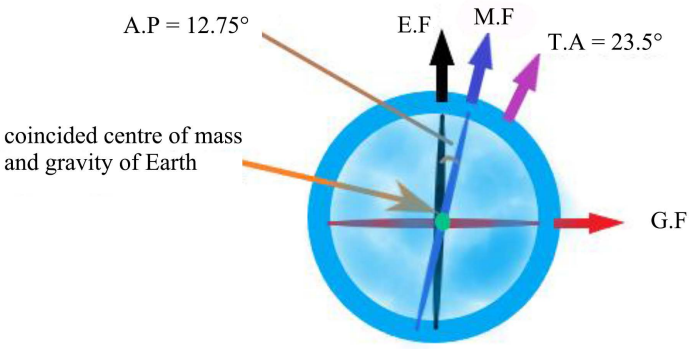


Figure 25. Angle of Precession [A.P] and Tilt Angle [T.A] of Earth.

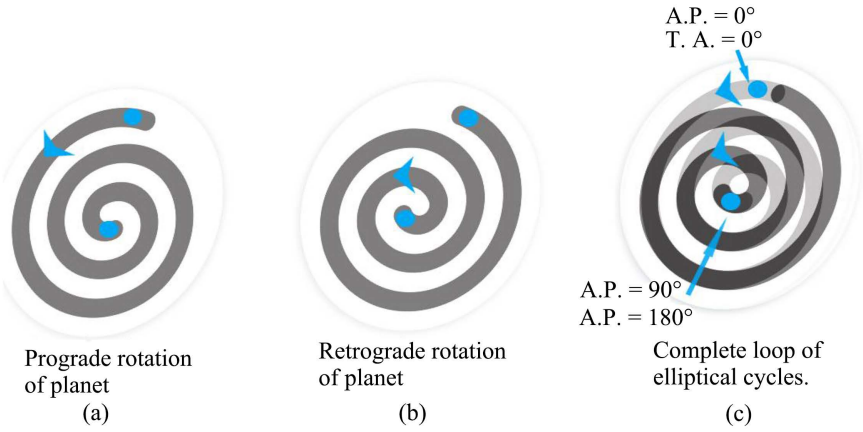


Figure 26. (a) Elliptical orbits for prograde rotation, (b) Elliptical orbits for retrograde rotation, (c) Complete loop of elliptical orbits.

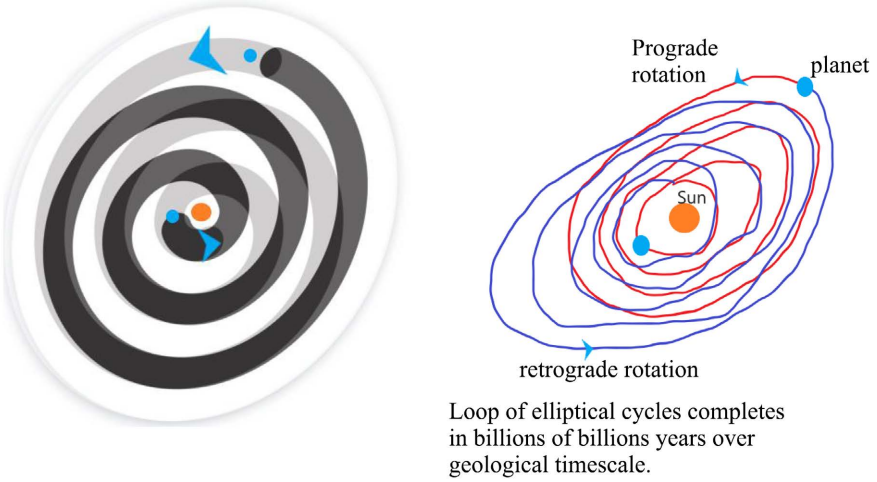


Figure 27. (a) Loop of elliptical orbits; (b) Loop of elliptical orbits.

4. Conclusion

In conclusion, these studies collectively offer a paradigm-shifting perspective on the universe, challenging traditional notions of time, space, and cosmic dynamics. They propose a rotating universe with a central energy pool, where time's relativity becomes apparent as objects move within varying distances. The concept of Mega Central Energy Pools (MCEPs) as drivers of universe rotation and galaxy generation expands our understanding of cosmic processes. Additionally, the investigations into photons reveal their dualistic nature and their role in forming standing waves, advancing our comprehension of fundamental quantum principles. Furthermore, the exploration of Venus's unique characteristics provides insights into the intricate connections between microscopic processes and macroscopic planetary behaviors, paving the way for transformative approaches to understanding celestial dynamics. These findings collectively inspire further inquiry and open new avenues for exploration into the mysteries of the cosmos.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

Declaration of ChatGPT-3.5

As English is not my first language and I am not an English language expert, that's why I used IA language model to rewrite my article. But I declare that all concepts are my own original concepts.

Data Availability Statement

No Data associated in the manuscript.

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